

REMARKS

I. Status of the Application

Claims 1-10 are pending in this application. In the January 11, 2005 office action, the Examiner:

- A. Objected to the drawings because certain elements of Figs. 1, 2 and 4 required descriptive legends;
- B. Objected to claim 9 as allegedly being in improper form;
- C. Rejected claims 1 and 4 under 35 U.S.C. §101 as allegedly conflicting with claim 5 of U.S. Patent Application serial no. 10/685,083 (double patenting);
- D. Rejected claims 1-3, 7, 8 and 10 under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,922,939 to Cota et al. (hereinafter "Cota"); and
- E. Rejected claims 4-6 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Cota in view of U.S. Patent No. 5,027,077 to Yanagisawa et al. (hereinafter "Yanagisawa").

In this response, applicants have amended claims 1, 4-7 and 10 to address minor wording errors and to clarify the claimed subject matter. Applicants have further canceled claims 8 and 9, and added new claims 11-20. Applicants respectfully traverse the rejections of the claims in view of the foregoing amendments and the following remarks.

II. Proposed Corrections to the Drawings Have Been Submitted

Replacement drawing sheets that include proposed corrections to Figs. 1, 2 and 4 have been submitted. Formal drawing replacements will be provided upon acceptance of the proposed corrections by the Examiner.

III. The Objection to Claim 9 is Moot

The Examiner objected to claim 9. Claim 9 has been canceled, without prejudice. Accordingly, it is respectfully submitted that the objection to claim 9 is moot.

IV. The Double Patenting Rejection

It appears that the Examiner has rejected claims 1 and 4 for double patenting with respect to claims 1 and 5 of U.S. patent application serial no. 10/685,083. Several claims have been canceled from U.S. patent application serial no. 10/685,083, including claim 5. It is respectfully submitted that there is no statutory double patenting issue between the two applications, as amended. Claims 1 and 4 are not identical in scope to any of the remaining claims of U.S. Patent application serial no. 10/685,083. It is therefore respectfully submitted that the statutory double patenting rejection of claims 1 and 4 is moot and should be withdrawn.

V. The Anticipation Rejection of Claim 1 is in Error

In the January 10, 2005 office action, the Examiner rejected claim 1 as allegedly being anticipated by Cota. As will be discussed below in detail, Cota does not teach, show or

suggest each and every element of claim 1. As a consequence, it is respectfully submitted that the anticipation rejection of claim 1 should be withdrawn.

A. The Present Invention

Claim 1 is directed to a method of determining air humidity with a capacitive moisture measuring element. The method includes determining a current moisture signal from electrical properties of the capacitive moisture measuring element. The method also includes determining a corrected moisture signal from the current moisture signal. To this end, in a measuring phase with rising relative air humidity RH, the corrected moisture signal is the current moisture *increased* by a correction value $a(RH)$. However, in a measuring phase with falling relative air humidity RH the corrected moisture signal *reduced* by a correction value $a(RH)$.

Thus, the method can account for hysteresis in the measurement by increasing a measurement value during rising humidity periods, and decreasing a measurement value during falling humidity periods.

B. Cota

Cota is directed to a relative humidity sensing device that includes a humidity sensitive capacitor. The sensor unit has a tubular housing that may be inserted through an aperture into an environment to be measured. (Cota at Abstract). The sensor unit electronics employ a calibration adjustment that takes the difference between the actual measurement and a calibrated zero measurement, and divides it by a value representative of the entire

measurement scale. (*Id.* at col. 5, lines 1-13).

C. Cota Does Not Teach Adjusting the Measurement
Based on Whether Relative Humidity is Rising or Falling

Cota fails to teach, show or suggest determining a corrected moisture signal wherein “in a measuring phase with rising relative air humidity RH the corrected moisture signal is the current moisture increased by a correction value $a(RH)$ and wherein in a measuring phase with falling relative air humidity RH the corrected moisture signal reduced by a correction value $a(RH)$ ”, as called for in claim 1. In particular, Cota does not teach differing the correction adjustment based on whether the relative humidity is rising or falling. Cota applies the same adjustment value *regardless* of whether the relative humidity is rising or falling.

In particular, as discussed above, the invention of claim 1 *adds* a correction value during rising humidity periods, and *subtracts* a correction value during falling humidity periods. The invention of claim 1 performs such adjustments to account for hysteresis in the measurement operation that is caused by rising or falling relative humidity. By contrast, Cota uses an equation that does not take into consideration whether the relative humidity is rising or falling, but rather *only* the instantaneous value of the humidity measurement. (Cota at col. 5, lines 1-13). Indeed, Cota does not acknowledge or discuss the existence of such hysteresis, and thus contains no motivation for implementing a factor based on whether the relative humidity is falling or rising. Thus, Cota fails to teach or suggest a corrected moisture signal as claimed in claim 1.

Cota therefore fails to teach, disclose or suggest each and every element of claim 1. As a consequence, it is respectfully submitted that the rejection of claim 1 as being anticipated

by Cota is in error and should be withdrawn.

VI. Claims 2, 3 and 7

Claims 2, 3 and 7 also stand rejected as allegedly being anticipated by Cota. Claims 2, 3 and 7 all depend from and incorporate all of the limitations of claim 1. Accordingly, for at least the same reasons as those set forth above in connection with claim 1, it is respectfully submitted that the rejection of claims 2, 3 and 7 over Cota should be withdrawn.

VII. Claims 4-6

Claims 4-6 all stand rejected as allegedly being unpatentable over Cota in view of Yanagisawa. Claims 4-6 all depend from and incorporate the limitations of claim 1. The Examiner cites Yanagisawa as teaching the limitations added in claims 4, 5 and 6. Yanagisawa is not cited as teaching *adding* or *subtracting* a correction value based on whether the relative humidity is rising or falling. Moreover, Yanagisawa does not, in fact, appear to teach adding or subtracting a correction value based on whether the relative humidity is rising or falling. Accordingly, for at least the same reasons as those set forth above in connection with claim 1, it is respectfully submitted that the rejection of claims 4-6 over Cota and Yanagisawa should be withdrawn.

VIII. New Claim 11

New claim 11 is an apparatus claim having similar limitations as claim 8 as originally filed. However, claim 8 was written as an apparatus claim depending on claim 1. New claim

11 is an independent apparatus claim having positively recited elements, and does not depend on claim 1. Nevertheless, claim 11 includes a limitation directed to a correction unit operable to generate a correction signal, “wherein in a measuring phase with rising relative air humidity RH the corrected moisture signal is the current moisture increased by a correction value $a(RH)$ and wherein in a measuring phase with falling relative air humidity RH the corrected moisture signal reduced by a correction value $a(RH)$.”

As discussed above in connection with claim 1, neither Cota alone, nor the combination of Cota and Yanagisawa proposed by the Examiner, teach or suggest such a limitation. Accordingly, for at least the same reasons as those set forth above in connection with claim 1, it is respectfully submitted that claim 11 is patentable over the prior art.

IX. Claims 10 and 12-14

Claims 10 and 12-14 depend from and incorporate all of the limitations of claim 11. Accordingly, for at least the same reasons as those set forth above in connection with claim 11, it is respectfully submitted that claims 10 and 12-14 are patentable over the prior art.

X. New Claims 15- 20

New claims 15-20 are directed to methods of determining air humidity with a capacitive moisture measuring element. Those methods include determining a current moisture signal from electrical properties of the moisture measuring element. Those methods also include performing adjustments based on whether the humidity is rising or falling. In particular, the methods include steps of adjusting the current moisture signal in a first

direction to generate a corrected current moisture signal if a rising relative air humidity is detected, and adjusting the current moisture signal in a second direction to generate the corrected current moisture signal if a falling relative air humidity is detected. The second direction is opposite of the first direction.

As discussed above in connection with claim 1, neither Cota nor Yanagisawa teach a humidity sensor in which a measurement signal is adjusted in a manner that is based on whether the relative humidity is rising or falling. Accordingly, it is respectfully submitted that new claims 15-20 are allowable over the prior art.

XI. Conclusion

For all of the foregoing reasons, it is respectfully submitted the applicants have made a patentable contribution to the art. Favorable reconsideration and allowance of this application is, therefore, respectfully requested.

Respectfully submitted,



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